REMARKS

This Amendment is in response to the Office Action dated August 22, 2005, in which claims 1-23 were rejected. With this Amendment, claims 1, 3, 4, 7, 8, 14, 20, and 21 are amended, and claim 2 has been canceled. Claims 1 and 3-23 are presented for reconsideration and allowance.

In paragraph 3 of the Office Action, a broad interpretation of "nanocluster" was advanced, which was then used in the rejections made in paragraphs 8-11. With this Amendment, both independent claims 1 and 14 have been amended to clarify that the present invention makes use of nanoclusters of a first magnetic material containing approximately 200 to 800 atoms per nanocluster surrounded by a second magnetic material. The nanoclusters of the first magnetic material may be coated "in flight" by the second material during deposition as described at page 7, line 13 through page 11, line 15 and/or may be surrounded by a codeposited magnetic matrix material, as described at page 11, line 16 through page 12, line 18. In both cases, the particles of a first magnetic material are surrounded by another magnetic material. This produces a surface effect which results in a magnetic saturation moment which is greater than bulk properties in the same magnetic material. The surrounding of the nanocluster magnetic material with another magnetic material maximizes surface area to the volume of the first magnetic material.

In paragraph 6 of the Office Action, claim 14 was rejected under 35 U.S.C. 112, first paragraph. As the Examiner noted, claim 14 contained a typographical error. That error has been corrected with this Amendment, and the rejection should be withdrawn.

In paragraph 8 of the Office Action, claims 1-13 were rejected under 35 U.S.C. § 102(b) "as being anticipated by Sun et al. (IEEE Trans. Mag., 36, 5, 2000, 2506 - 2508) as evidenced by Ando et al. ('753 B1) and Kong et al. (Mag. Conf., 2002, INTERMAG Europe 2002, Digest Papers)."

Sun et al. discloses FeCoN films of a thickness of about 1,000 angstroms sandwiched between thin (5nm) Permalloy layers to produce a magnetic saturation moment of about 24.5 kG (i.e. 2.45 T). While Sun reports a high magnetic saturation moment, it does not teach or suggest the procedure defined in the present application--namely nanoclusters of a first magnetic material containing approximately

200 to 800 atoms per nanocluster surrounded by a second magnetic material. In Sun et al., the FeCoN films are not individual nanoclusters or particles that are surrounded by a second magnetic material.

Many attempts are underway to increase magnetic saturation moment. Just because Sun reports a high saturation moment with one particular structure using alternating thin films does not suggest Applicant's unique magnetic element incorporating nanoclusters of a first magnetic material surrounded by a second magnetic material, as defined in claim 1. The rejection based upon Sun et al. should be withdrawn.

In paragraph 9 of the Office Action, claims 1-4, 6, 17, and 19-23 were rejected under 35 U.S.C. 102(a) and/or(e) "as being anticipated by Minor et al. (U.S. Patent App. No. 2003/0133224 A1) as evidenced by Ando et al. ('753 B1)". Minor et al. also shows approach to achieving a high magnetic saturation moment of greater than 2.4 T. In the Office Action, it was argued that "nanoclusters" and "containing approximately 200 to 800 atoms" would have been inherently present. Minor et al. shows alternating layers of materials, not nanoclusters of a first magnetic material containing approximately 200 to 800 atoms per nanocluster surrounded by a second magnetic material.

Just because Minor et al. reports a high magnetic saturation moment does not imply that the structure, or the way in which the magnetic saturation properties are achieved are the same. With the amendment to claims 1 and 14, the arguments in the Office Action that Minor et al. inherently has the structure claimed cannot be supported, and the rejection based upon Minor should be withdrawn.

In paragraph 10 of the Office Action, claims 1-23 were rejected under 35 U.S.C. 102(b) "as being anticipated by, or in the alternative under 35 U.S.C. 103(a) as being unpatentable over Yoshikawa et al. (U.S. Patent No. 6,132,892) in view of Sun et al. (IEEE Trans. Mag., 36, 5, 200, 2506-2508) and Rawlings et al. (U.S. Patent No. 4,933,026). In either case, the above are evidenced by Ando et al. ('753 B1) and Kong et al. ((Mag. Conf., 2002, INTERMAG Europe 2002, Digest Papers)."

First, the rejection based upon anticipation should be withdrawn, since it appears to be based upon a combination of at least three, and perhaps as many as five references.

Second, the obviousness rejection based upon Yoshikawa et al. and others, once again, relies upon equating "nanoclusters" to "grains" of a magnetic film. The amendments to claims 1 and 14 make it clear that the structure taught and claimed by Applicant is not shown or suggested by Yoshikawa et al. alone, or in combination with any of the other references. The rejections based on Yoshikawa and the other references has been overcome, and should be withdrawn.

In paragraph 11 of the Office Action, claims 14-23 were rejected under 35 U.S.C. 103(a) "as being unpatentable over Sun et al., as evidenced by Ando et al. and Kong et al. as applied above, and further in view of Yoshikawa et al. ('892)." In light of the amendment to claim 14, this rejection should also be withdrawn. None of the cited references describe a magnetic write element having a first and second magnetic layers that include nanophase magnetic material incorporating nanoclusters of a first magnetic material containing approximately 200 to 800 atoms per nanocluster surrounded by a second magnetic material. The rejection of claims 14-23 should be withdrawn.

In conclusion, claims 1 and 3-23, as amended, are now in condition for allowance. Notice to that effect is requested.

Respectfully submitted,

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